

# Appendix B Case, Seals, and Joints PFORs

# Final Postflight Hardware Evaluation Report RSRM-29 (STS-54)

September 1993

#### Prepared for:

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION GEORGE C. MARSHALL SPACE FLIGHT CENTER MARSHALL SPACE FLIGHT CENTER, ALABAMA 35812

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SPACE OPERATIONS

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(NASA-CR-193899) POSTFLIGHT HARDWARE EVALUATION RSRM-29 (STS-54). CASE, SEALS, AND JOINTS PEURS, APPENDIX 3 Final Report

N94-25020

**Unclas** 

(Thiokol Corp.) 85 p

G3/37 0204191



#### CASE, SEALS, AND JOINTS REQUIRED PFOR LIST

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# POSTFLIGHT OBSERVATION RECORD (PFOR) B-2 S&A Device (Barrier-Booster and Environmental Seal Regions) Condition

Motor No.: 360L029	Side: Left (A)	Date:	11281	7'-
Assessment Engineer(s)/Inspector(	(s): Durch Garald Das	120,14	Cal	Tanko
Barrier-Booster Bore and Rotor Ob- A. Heat Affected or Eroded O- B. Soot To or Past O-rings? C. Heat Affected Metal? D. O-ring Damage (In Groove) E. Metal Damage? F. Excessive or No Grease? G. Corrosion? H. Foreign Material? I. Teflon Retainer Damage?	servations: ring (in Groove)?	Yes	No V V V V	Comment #
Environmental Seal Region Observe  J. Environmental O-ring Assen  Without Magnification)?  K. Foreign Material?			<u>/</u>	
tes / Comments				
Preliminary PFAR(s)?Yes	No Preliminary PFAR	Number(s):		
Yes	No Clarification Form	Page No.(s)	):	
REVISION	DOC NO.	TWR-64222	VOL B-1	



### POSTFLIGHT OBSERVATION RECORD (PFOR) B-7 S&A Rotor Shaft O-ring Condition (Detailed)

Motor No.: 360L029	Side: Left (A)	D	ate: // 29/93	
Assessment Engineer(s)/Inspector	(8): D. Gareant D. Barte	1	C. Tarile	1
Location: S&A Device Barrier	r-Booster Rotor Shaft	<i>,</i> -		
Forward Primary O-ring Observation  A. Heat Affected or Eroded O  B. O-ring Defects/Damage?	-	Yes	No 	Comment #
Aft Primary O-ring Observations:  C. Heat Affected or Eroded O  D. O-ring Defects/Damage?	-ring? -		<u></u>	
Forward Secondary O-ring Observe  E. Heat Affected or Eroded O  F. O-ring Defects/Damage?	-ring?			
Aft Secondary O-ring Observations G. Heat Affected or Eroded O H. O-ring Defects/Damage?			<u> </u>	
Preliminary PFAR(s)?Yes	No Preliminary PFAR	Numb	er(s):	
Yes	No Clarification Form	Page	No.(s):	
REVISION	DOC NO.	TWR	-64222 VOL	



#### POSTFLIGHT OBSERVATION RECORD (PFOR) B-1 Leak Check Plug/Sil and Port Condition (At Removal)

Motor No.: 360L029	Side: Left (A)	Date:	77.45.72
Assessment Engineer(s)/Inspector	(s): E. Govern D. P.	11	
Location: 126-Degree Barrier-Boo			
Leak Check Plug Observations:  A. Sooted Metal Surfaces?		Yes	No Comment #
B. Soot To or Past O-ring?			
C. Foreign Material?			
D. O-ring Damage (in Groove)	•		
E. Heat Affected or Eroded O- F. Excessive or No Grease on	- ,		<del></del>
G. Excessive Grease on Plug?	O-Img1		
H. Corrosion?		- <del></del>	
I. Thread Damage (Visible at	Removal)?		1/
Leak Check Port Observations:			
J. Sooted Metal Surfaces?			1/
K. Foreign Material?			
L. Excessive Grease?		<del></del>	<del></del>
M. Corrosion?			
N. Metal Damage?			<del></del>
O. Heat Affected Metal?	·		<u> </u>
P. Obstructed Through Hole?			
Notes / Comments			
reliminary PFAR(s)? Yes	No Prelimina	ry PFAR Number(s):	
Yes	No Clarificati	on Form Page No.(s	·):
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### POSTFLIGHT OBSERVATION RECORD (PFOR) B-4 Leak Check Plug/SII Condition (Detailed)

Motor No.: 360L029	Side: Left (A)	Date: place in the	-			
Assessment Engineer(s)/Inspector	Assessment Engineer(s)/Inspector(s): D. Garecht. D. Bartelt C. Ta plan					
Location: 126-Degree Barrier-Boo	•	<del>,</del>				
Leak Check Plug Observations:  A. Foreign Material Between to B. Heat Affected Metal?  C. Seal Surface/Thread Damage	•	Yes No	Comment #			
Notes / Comments						
a En aumferen Ind not exte	tial lines under and into seal su	pluy head,	kines			
Preliminary PFAR(s)? Yes	s√_No Preliminary PF	AR Number(s):				
Yes		orm Page No.(s):				
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# POSTFLIGHT OBSERVATION RECORD (PFOR) B-6 Small Diameter (Leak Check Plug/SII) O-ring Condition (Detailed)

Motor No.: 360L029	Side: Left (A)	Date:	114 - 113
Assessment Engineer(s)/Inspector	(s): D. Garecht	D. Bartelt	C. Tajler
Location: 126-Degree Barrier-Boo		, , , , , , , , , , , , , , , , , , , ,	
Secondary O-ring Observations:  A. Heat Affected or Eroded O-B. O-ring Defects/Damage?	ring?	Yes	No Comment #
Notes / Comments	4		
	•		
•			
	.J		
Treliminary PFAR(s)?Yes	No Prelim	inary PFAR Number(s):	
carification Form(s)?Yes	No Clarific	ation Form Page No.(s	):
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### POSTFLIGHT OBSERVATION RECORD (PFOR) B-1 Leak Check Plug/SII and Port Condition (At Removal)

Motor No.: 360L029	Side: Left (A)		Date:	112319	/ =
Assessment Engineer(s)/Inspector	(s): D Gara	cht, D. Bart		,	1/01
Location: 18-Degree SII			<del>- / /- ,-</del>		7.7.6.7
SII Observations:			/es	No	Comment #
A. Sooted Metal Surfaces?				V	
B. Soot To or Past O-ring?					
C. Foreign Material?	•	<del></del>			
D. O-ring Damage (In Groove)	?			./	
E. Heat Affected or Eroded O-	ring (In Groove)?	_		V	
F. Excessive or No Grease on	O-ring?			$\overline{V}$	
G. Excessive Grease on SII?					<del> </del>
H. Corrosion?				1	
I. Thread Damage (Visible at	Removal)?				
SII Port Observations:					
J. Sooted Metal Surfaces?				1/	
K. Foreign Material?					<del></del>
L. Excessive Grease?				:/	<del></del>
M. Corrosion?				\.'	
N. Metal Damage?				1.,	
O. Heat Affected Metal?			<del></del>	V//	
P. Obstructed Leak Check Thr	ough Hole?	_			
Notes / Comments			<u> </u>		
	,				
Preliminary PFAR(s)?Yes	No No	Preliminary PFAR Nu	mber(s)	):	
Clarification Form(s)? Yes	No	Clarification Form Pa	ge No.	(s):	
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### POSTFLIGHT OBSERVATION RECORD (PFOR) B-4 Leak Check Plug/SII Condition (Detailed)

Motor No.: 360L029	Side: Left (A)	Date	1108173	
Assessment Engineer(s)/Inspector	(s): D. Garecht D. K	artell C.	Taylor	
Location: 18-Degree SII		7	1	
Sil Observations:  A. Foreign Material Between to B. Heat Affected Metal?		Yes	No.	Comment #
C. Seal Surface/Thread Dama	ge?			$\underline{\mathcal{L}}$
Notes / Comments				
a Small cluster 0	tourface rou	ghness n	ear su	ol surface
under SIT		_		
"				
	,			
Preliminary PFAR(s)? Yes	$\underline{\hspace{1cm}}$ No Prelimina	ary PFAR Number(s	s):	
Yes	No Clarificat	ion Form Page No.	(s):	
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### POSTFLIGHT OBSERVATION RECORD (PFOR) B-6 Small Diameter (Leak Check Plug/SII) O-ring Condition (Detailed)

Motor No.: 360L029	Side: Left (A)	Date: 11.2.2.19 >
Assessment Engineer(s)/Inspector	(s): Decuecht D. Bartel	1. C. 76 . Mar
Location: 18-Degree Sil		
Primary O-ring Observations:  A. Heat Affected or Eroded O-B. O-ring Defects/Damage?	-ring? 	Yes No Comment #
Secondary O-ring Observations:  C. Heat Affected or Eroded O- D. O-ring Defects/Damage?	-ring? 	
Notes / Comments		
		•
Preliminary PFAR(s)? Yes	No Preliminary PFAR	lumber(s):
Yes	No Clarification Form	Page No.(s):
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#### POSTFLIGHT OBSERVATION RECORD (PFOR) B-1 Leak Check Plug/Sil and Port Condition (At Removal)

Motor No.: 360L029	Side: Left (A)	Date:	11051.	3
Assessment Engineer(s)/Inspector	(s): D. Garecht, D. Bar		Tay 1	
Location: 198-Degree Sil		<del>, _ , , , , , , , , , , , , , , , , , ,</del>		
SII Observations:		Yes	No	Comment #
A. Sooted Metal Surfaces?				<del></del>
B. Soot To or Past O-ring?			<del></del>	
C. Foreign Material?		<del></del>	<del></del>	
D. O-ring Damage (In Groove)  E. Heat Affected or Eroded O-	•		<u> </u>	
F. Excessive or No Grease on	- ·			
G. Excessive Grease on SII?	O-ring?	<del></del>	-V	
H. Corrosion?	•		$\frac{V}{V}$	
I. Thread Damage (Visible at	Removel\2		<u> </u>	<del></del>
da Damage (Visible at	Tielliovaly?	<u> </u>	<del></del>	<del></del>
SII Port Observations:				
J. Sooted Metal Surfaces?				
K. Foreign Material?	•		V	
L. Excessive Grease?	•	,	i/	
M. Corrosion?			V.	
N. Metai Damage?			Y'	
O. Heat Affected Metal?			VZ	
P. Obstructed Leak Check Thi	rough Hole?		1/	
Notes / Comments				
Notes / Comments				
	/			
Traliminary PFAR(s)?Yes	No Preliminary PFAR	Number(s):		
o.arification Form(s)? Yes	No Clarification Form	Page No.(s	s):	
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### POSTFLIGHT OBSERVATION RECORD (PFOR) B-4 Leak Check Plug/SII Condition (Detailed)

Motor No.: 360L029	Side: Left (A)	Date: // 🌣 🖯	.173
Assessment Engineer(s)/Inspector(	(s): Dearecht D.B		ylen
Location: 198-Degree SII	, , , , , , , , , , , , , , , , , , ,	,	
SII Observations:  A. Foreign Material Between the B. Heat Affected Metal?  C. Seal Surface/Thread Damag		Yes No	
Notes / Comments		****	
Taliminary PFAR(s)?Yes		PFAR Number(s): n Form Page No.(s):	
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## POSTFLIGHT OBSERVATION RECORD (PFOR) B-6 Small Diameter (Leak Check Plug/SII) O-ring Condition (Detailed)

Motor No.: 360L029	Side: Left (A)	Date: 17	5992		
Assessment Engineer(s)/Inspector	(s): D Garecht D loort				
Location: 198-Degree SII					
Primary O-ring Observations:  A. Heat Affected or Eroded O-B. O-ring Defects/Damage?	ring?		No Comment #		
Secondary O-ring Observations:  C. Heat Affected or Eroded O- D. O-ring Defects/Damage?	ring?				
Notes / Comments					
~ liminary PFAR(s)? Yes	No Preliminary PF	'AR Number(s):			
Yes	No Clarification Fo	orm Page No.(s):			
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### POSTFLIGHT OBSERVATION RECORD (PFOR) B-3 Internal Nozzle Joint Condition

Motor No.: 360L029	Side: Left (A)	Date:	14503	
Assessment Engineer(s)/Inspector(	s): 7 & 110 / 1			
Joint: Nose Inlet-to-Flex Bearing-t	o-Cowl (Joint #2)			
Internal Nozzle Joint Observations:  A. Soot To or Past O-rings?  B. Heat Affected Metal?  C. Foreign Material?  D. RTV in Contact With or Past  E. O-ring Damage (In Groove)  F. Heat Affected or Eroded O-  G. Excessive or No Grease?  H. Corrosion?  I. Metal Damage?	?	Yes	No	Comment #
Notes / Comments  The state of		e out b		
Proliminary PFAR(s)?Yes		ary PFAR Number(stion Form Page No.	(s):	ORIGINAL PAGE OF POOR QUALI

#### POSTFLIGHT OBSERVATION RECORD (PFOR) B-5 Large Diameter (Joint) O-ring Condition (Detailed)

Motor No.: 360L029	Side: Left (A)		Date: //.5	8/43
Assessment Engineer(s)/Inspe	ctor(s): Dance da	notil		
Joint: Nose Inlet-to-Flex Bea				
Primary O-ring Observations:  A. Heat Affected or Erode  B. O-ring Damage/Defects			/es   N	Comment #
Secondary O-ring Observation  A. Heat Affected or Erode  B. O-ring Damage/Defects	d O-ring?			
Notes / Comments				
iminary PFAR(s)?	Yes No	Preliminary PFAR Nu	umber(s):	
oarification Form(s)?	Yes No	Clarification Form P	age No.(s):	
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#### POSTFLIGHT OBSERVATION RECORD (PFOR) B-1 Leak Check Plug/SII and Port Condition (At Removal)

Motor No.: 360L029	Side: Left (A)		Date: 1. 3	193
Assessment Engineer(s)/Inspector	(s): (3)	2 1st		
Location: Nose Inlet-to-Flex Bear				
Leak Check Plug Observations:	<u> </u>	Y	'es i	No Comment #
A. Sooted Metal Surfaces?				
B. Soot To or Past O-ring?			<del></del>	
C. Foreign Material?	_	<del></del>		
D. O-ring Damage (In Groove)		<del></del>	<del></del>	
E. Heat Affected or Eroded O	• .			
F. Excessive or No Grease on	_		<del></del>	
G. Excessive Grease on Plug? H. Corrosion?			<del></del>	<u> </u>
I. Thread Damage (Visible at	Removal)?			
i. Imeau bamage (visible at	nemoval) i		<del></del>	
Leak Check Port Observations:				
J. Sooted Metal Surfaces?			4.7	/
K. Foreign Material?		<del></del>		<del></del>
L. Excessive Grease?			<u> </u>	
M. Corrosion?			- J	
N. Metal Damage?			1/	
O. Heat Affected Metal?			D.	
P. Obstructed Through Hole?	•			<u> </u>
Notes / Comments				
Example gi	SOM 16			
$\mathcal{I}_{I}}}}}}}}}}$	1/2			
	j'			
	//			
Preliminary PFAR(s)? Yes	B <u>∵/</u> No Pr	eliminary PFAR Nu	ımber(s):	
arification Form(s)?Yes	No CI	arification Form Pa	age No.(s):	
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### POSTFLIGHT OBSERVATION RECORD (PFOR) B-4 Leak Check Plug/SII Condition (Detailed)

Location: Nose Inlet-to-Flex Bearing-to-Cowl (Joint #2)  Leak Check Plug Observations:  A. Foreign Material Between the O-ring and Plug?  B. Heat Affected Metal?  C. Seal Surface/Thread Damage?  Notes / Comments  Notes / Comments	Motor No.: 360L029	Side: Left (A)	) 	Date: /	12000	
Leak Check Plug Observations:  A. Foreign Material Between the O-ring and Plug?  B. Heat Affected Metal?  C. Seal Surface/Thread Damage?  Notes / Comments  Notes / Comments	Assessment Engineer(s)/Inspecto	r(s): 34	richt			
A. Foreign Material Between the O-ring and Plug?  B. Heat Affected Matal?  C. Seal Surface/Thread Damage?  Notes / Comments		•				
A. Foreign Material Between the O-ring and Plug?  B. Heat Affected Metal?  C. Seal Surface/Thread Damage?  Notes / Comments  Notes / Comments  Notes / Comments  President Surface/Thread Damage?  Notes / Comments  Notes / Comment	Leak Check Plug Observations:			Yes	No	Comment #
C. Seal Surface/Thread Damage?  Notes / Comments  Notes / Comments  - 'liminary PFAR(s)? Yes No Preliminary PFAR Number(s): - Larification Form(s)? Yes No Clarification Form Page No.(s): - DOC NO. TWR-64222 Vol.	A. Foreign Material Between	the O-ring and Plu	g?		V	
Notes / Comments  - 'liminary PFAR(s)?					1/	
**iminary PFAR(s)?Yes No Preliminary PFAR Number(s):	C. Seal Surface/Thread Dama	age?	-	<del></del> -		
Carification Form(s)? No Clarification Form Page No.(s):  DOC NO. TWR-64222 VOL	Notes / Comments					
Carification Form(s)? No Clarification Form Page No.(s):  DOC NO. TWR-64222 VOL						
Carification Form(s)? Yes No Clarification Form Page No.(s):  DOC NO. TWR-64222 VOL						
Clarification Form(s)? Yes No Clarification Form Page No.(s):  PREVISION DOC NO. TWR-64222 VOL						
Clarification Form(s)? Yes No Clarification Form Page No.(s):  PREVISION DOC NO. TWR-64222 VOL						
Clarification Form(s)? Yes No Clarification Form Page No.(s):  PREVISION DOC NO. TWR-64222 VOL						
Clarification Form(s)? Yes No Clarification Form Page No.(s):  PREVISION DOC NO. TWR-64222 VOL						
Clarification Form(s)? Yes No Clarification Form Page No.(s):  PREVISION DOC NO. TWR-64222 VOL						
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Clarification Form(s)? Yes No Clarification Form Page No.(s):  PREVISION DOC NO. TWR-64222 VOL						
Carification Form(s)? No Clarification Form Page No.(s):  DOC NO. TWR-64222 VOL						
Clarification Form(s)? Yes No Clarification Form Page No.(s):  PREVISION DOC NO. TWR-64222 VOL						
Carification Form(s)? Yes No Clarification Form Page No.(s):  DOC NO. TWR-64222 VOL						
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Clarification Form(s)? Yes No Clarification Form Page No.(s):  PREVISION DOC NO. TWR-64222 VOL						
Clarification Form(s)? Yes No Clarification Form Page No.(s):  PREVISION DOC NO. TWR-64222 VOL						
PEVISION  No Clarification Form Page No.(s):  DOC NO. TWR-64222 VOL						
Clarification Form(s)? Yes No Clarification Form Page No.(s):  PREVISION DOC NO. TWR-64222 VOL						
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Carification Form(s)? No Clarification Form Page No.(s):  BEVISION DOC NO. TWR-64222 VOL	- liminary PFAR(s)? Ye	s V	Preliminary PEAR	Number(s):		
REVISION DOC NO. TWR-64222 VOL		<del></del>	- Tomming 11 All			
	uarification Form(s)?Ye	s No	Clarification Form	Page No.(s	):	<del></del>
SEC PAGE B-15	REVISION		DOC NO.			
•			SEC	PA	AGE B-15	<del></del>



### POSTFLIGHT OBSERVATION RECORD (PFOR) B-6 Small Diameter (Leak Check Plug/SII) O-ring Condition (Detailed)

Motor No.: 360L029	Side: Left (A)		Date:	11/2 1/7	<u> </u>
Assessment Engineer(s)/Inspector	(s): Jane 6.4	e Clif			
Location: Nose Inlet-to-Flex Bear					
	Secondary O-ring Observations:  A. Heat Affected or Eroded O-ring?  B. O-ring Defects/Damage?			No.	Comment #
B. O-ring Defects/Damage?					
Notes / Comments			•		
		•			
	,				
^-aliminary PFAR(s)? Yes	No	Preliminary PFAR	Number(s):		
Yes	No	Clarification Form	Page No. (s	s):	
REVISION			TWR-6422		
		SEC	F	PAGE B-16	



### POSTFLIGHT OBSERVATION RECORD (PFOR) B-3 Internal Nozzle Joint Condition

Motor No.: 360L029	Side: Left (A)		Date: / [43]	
Assessment Engineer(s)/Inspector	(s): D. Garen int			
Joint: Nose Inlet-to-Throat (Joint				
Internal Nozzle Joint Observations:  A. Soot To or Past O-rings?  B. Heat Affected Metal?		,	Yes No	Comment #
C. Foreign Material?				
D. RTV in Contact With or Page E. O-ring Damage (in Groove)			<u> </u>	
F. Heat Affected or Eroded O. G. Excessive or No Grease?			V.	
H. Corrosion?				
I. Metal Damage?			<u> </u>	
Notes / Comments			· · · · /	$\dot{r}$
	efica starting	<del></del>		DAE 9-17-93
,				,,,
				i
Niminary PFAR(s)? Yes	No Prelim	inary PFAR No	umber(s):	
Ciarification Form(s)? Yes	No Clarific	ation Form P	age No.(s):	ORTONAL
REVISION		DOC NO. T	WR-64222  vo	ORIGINAL FAGE OF POOR QUALI
		SEC	PAGE B-17	



#### POSTFLIGHT OBSERVATION RECORD (PFOR) B-5 Large Diameter (Joint) O-ring Condition (Detailed)

Motor No.: 360L029	Side: Left (A)	Date:	125/12	<del></del>
Assessment Engineer(s)/Inspector	(s): ) Garack			
Joint: Nose Inlet-to-Throat (Joint				
Primary O-ring Observations:  A. Heat Affected or Eroded O-B. O-ring Damage/Defects?		Yes	No y	Comment #
Secondary O-ring Observations:  A. Heat Affected or Eroded O-B. O-ring Damage/Defects?	-ring? 		<u>V</u>	
Notes / Comments				
Taliminary PFAR(s)?Yes	No Preliminary PFAR N	umber(s):		
Yes	No Clarification Form P	Page No.(s	):	
REVISION	DOC NO. T	<b>WR</b> -61``	VOL NGE B-18	



### POSTFLIGHT OBSERVATION RECORD (PFOR) B-1 Leak Check Plug/SII and Port Condition (At Removal)

Motor No.: 360L029	Side: Left (A)	Date	<b>:</b>	2
Assessment Engineer(s)/Inspector	(s): Pagrecht			
Location: Nose Inlet-to-Throat (J				
Leak Check Plug Observations:  A. Sooted Metal Surfaces?  B. Soot To or Past O-ring?  C. Foreign Material?  D. O-ring Damage (In Groove)  E. Heat Affected or Eroded Offices on No Grease on G. Excessive Grease on Plug?  H. Corrosion?  I. Thread Damage (Visible at	-ring (In Groove)? O-ring?	Yes	No /	Comment #
Leak Check Port Observations:  J. Sooted Metal Surfaces?  K. Foreign Material?  L. Excessive Grease?  M. Corrosion?  N. Metal Damage?  O. Heat Affected Metal?  P. Obstructed Through Hole?				
Notes / Comments  /// At A Comments  // 3//// // // // // // //// // // // //////				
Yes		inary PFAR Number	o.(s):	
REVISION		DOC NO. TWR-6	4222 VOL	OF POOR QUALIT



### POSTFLIGHT OBSERVATION RECORD (PFOR) B-4 Leak Check Plug/SII Condition (Detailed)

Motor No.: 360L029	Side: Left (A)		Date: //	22/3/	
Assessment Engineer(s)/Inspector	(8): My Che (200)	rentit			
Location: Nose Inlet-to-Throat (					
Leak Check Plug Observations:  A. Foreign Material Between the O-ring and Plug?			Yes	No )	Comment #
B. Heat Affected Metal?		_	<del></del>	<u> </u>	
C. Seal Surface/Thread Dama	ge?			<u> </u>	<del></del>
Notes / Comments					
•					
Preliminary PFAR(s)?Yes	No Pro	eliminary PFAR Nu	ımber(s):		
arification Form(s)? Yes	<u>./</u> No Cla	arification Form Pa	age No.(s):		
REVISION			WR-64222	VOL	
		SEC	PAG	B-20	



### POSTFLIGHT OBSERVATION RECORD (PFOR) B-6 Small Diameter (Leak Check Plug/SII) O-ring Condition (Detailed)

Motor No.: 360L029	Side: Left (A	)	Date:		÷
Assessment Engineer(s)/Ins	spector(s):	2.19.6011		<del></del>	
Location: Nose Inlet-to-Th					
Secondary O-ring Observation  A. Heat Affected or Erection		•	Yes	No	Comment #
B. O-ring Defects/Dame	age?			./	
Notes / Comments					
P-eliminary PFAR(s)?	YesNo	Preliminary PFAR No	umber(s):		
rification Form(s)?	YesNo	Clarification Form P	age No.(s	):	
REVISION			WR-64222		
		SEC	PA	<sup>GE</sup> B−21	

# Thickol corporation SPACE OPERATIONS

### POSTFLIGHT OBSERVATION RECORD (PFOR) B-3 Internal Nozzle Joint Condition

Motor No.: 360L029	Side: Left (A)	Date: 26 Jan 93
Assessment Engineer(s)/Inspector	(8): Jeft Haberstich Bob Co	a,ck
Joint: Throat-to-Forward Exit Cor	,	
Internal Nozzle Joint Observations:  A. Soot To or Past O-rings?  B. Heat Affected Metal?  C. Foreign Material?  D. RTV in Contact With or Past  E. O-ring Damage (In Groove)  F. Heat Affected or Eroded Office G. Excessive or No Grease?  H. Corrosion?  I. Metal Damage?	st the Primary O-ring?	Yes No Comment #
Notes / Comments		
	The corrosion was intermittent in	
Company of the second	corrosim was observed and vecant and from 195°-140°	the formal end any scal locations
2.) See sheet C=34		
(1) Light-to-needing region, from 200	um corrosom was observed to 290 degrees.	en the FEC scal
Median - to ho the throat me was on oft face and secondary	e near I.D. of part and also seal locations.	in the aff end of cunference. Corrusion between primary
2) See sheet (	<u>-7</u>	
Taliminary PFAR(s)? Yes	No Preliminary PFAR I	Number(s): 54C-U3
o.arification Form(s)? Yes	No Clarification Form	Page No.(s):
REVISION	DOC NO.	TWR-64222 VOL PAGE B-22



#### POSTFLIGHT OBSERVATION RECORD (PFOR) B-5 Large Diameter (Joint) O-ring Condition (Detailed)

Motor No.: 360L029 Side: Left (A	)	Date: 26 Jan	93
Assessment Engineer(s)/Inspector(s): Duve	Burtelt Jeff		
Joint: Throat-to-Forward Exit Cone (Joint #4)			
Primary O-ring Observations:  A. Heat Affected or Eroded O-ring?  B. O-ring Damage/Defects?		/es No	Comment #
Secondary O-ring Observations:  A. Heat Affected or Eroded O-ring?  B. O-ring Damage/Defects?			
Notes / Comments			
	·		
^ liminary PFAR(s)? Yes No	Preliminary PFAR Nu	ımber(s):	
orarification Form(s)?YesNo	Clarification Form Pa	age No.(s):	
REVISION	DOC NO. T	WR-64222 VOL	

#### POSTFLIGHT OBSERVATION RECORD (PFOR) B-1 Leak Check Plug/SII and Port Condition (At Removal)

Motor No.: 360L029	Side: Left (A)	Date: ,	26 January 93
Assessment Engineer(s)/Inspector	(s): Jeff Haberstich Davel		
Location: Throat-to-Forward Exit	······································		7-00
Leak Check Plug Observations:  A. Sooted Metal Surfaces?  B. Soot To or Past O-ring?	_	Yes	No Comment #
C. Foreign Material?  D. O-ring Damage (In Groove)  E. Heat Affected or Eroded O-			
F. Excessive or No Grease on G. Excessive Grease on Plug? H. Corrosion? I. Thread Damage (Visible at	- -		
Leak Check Port Observations:  J. Sooted Metal Surfaces?  K. Foreign Material?  L. Excessive Grease?  M. Corrosion?  N. Metal Damage?  O. Heat Affected Metal?  P. Obstructed Through Hole?			
Notes / Comments  Breakaway torque:  Running torque:  Light to-mediam corr approximately of	37 in-lbs 43 in-lbs 12 in-lbs 10 in-lbs com was observed on part ircumforence.	- Spotface	e-for
Preliminary PFAR(s)?Yes	No Preliminary PFAR I	Number(s):	
Yes	No Clarification Form	Page No.(s)	):
REVISION	DOC NO.	TWR-64222	vol



### POSTFLIGHT OBSERVATION RECORD (PFOR) B-4 Leak Check Plug/SII Condition (Detailed)

Motor No.: 360L029 Side:	Left (A)	:	Date: 26 Ja	u 93
Assessment Engineer(s)/Inspector(s):	Jeff Haberstiz	h		
Location: Throat-to-Forward Exit Cone (Joint #4)				
Leak Check Plug Observations:  A. Foreign Material Between the O-rin B. Heat Affected Metal?  C. Seal Surface/Thread Damage?	ng and Plug?	Yes	No V	Comment #
Notes / Comments				
Notes / Comments				
	•	,		
Proliminary PFAR(s)? Yes	V No Prelimi	nary PFAR Num	ber(s):	
rification Form(s)?Yes	No Clarific	ation Form Page	e No.(s):	
			1	
REVISION		DOC NO. TW	R-64222 VOL PAGE B-25	



### POSTFLIGHT OBSERVATION RECORD (PFOR) B-6 Small Diameter (Leak Check Plug/SII) O-ring Condition (Detailed)

Motor No.: 360L029	Side: Left (A)	Date:	26 Jan	93
Assessment Engineer(s)/Inspector	(s): Jeff Haberst	ich		
Location: Throat-to-Forward Exit Cone (Joint #4)				
Secondary O-ring Observations:  A. Heat Affected or Eroded O  B. O-ring Defects/Damage?	-ring?	Yes	No V	Comment #
Notes / Comments		4		
Preliminary PFAR(s)? Yes	No Prelim	inary PFAR Number(s)	:	
Sarification Form(s)? Yes	No Clarific	eation Form Page No.(	s):	
REVISION		DOC NO. TWR-6422	<del></del>	
			PAGE B-26	

### POSTFLIGHT OBSERVATION RECORD (PFOR) B-3 Internal Nozzle Joint Condition

Motor No.: 360L029	Side: Left (A)	Date: 2	7 Jan 93	
Assessment Engineer(s)/Inspector(	s): Jeff Hallerstich J	Λ		
Joint: Aft End Ring-to-Fixed Housing (Joint #5)				
Internal Nozzle Joint Observations:  A. Soot To or Past O-rings?  B. Heat Affected Metal?  C. Foreign Material?  D. RTV in Contact With or Past  E. O-ring Damage (In Groove)?  F. Heat Affected or Eroded O-ring Canada or No Grease?  H. Corrosion?  I. Metal Damage?	·	Yes	No Comment #	
Notes / Comments  () RTU was obserted following local	ived in contact with the items: 50°-107°, 225	-230° 240°	-ring at the -245°.	
2) Light to media Flange ID, fu	m corrosim was obsevuil circumference il	ed, on the ntermittently	aft end ring	
	No Preliminary PF	FAR Number(s):		
Carification Form(s)?Yes	No Clarification Fo	orm Page No.(s):		
REVISION	DOC NO		VOL B-27	

### POSTFLIGHT OBSERVATION RECORD (PFOR) B-5 Large Diameter (Joint) O-ring Condition (Detailed)

Motor No.: 360L029 S	ide: Left (A)		Date:	7 Jan	93
Assessment Engineer(s)/Inspector(s):	Jeff H	gharstah, Bill	Ferguson		
Joint: Aft End Ring-to-Fixed Housing					
Primary O-ring Observations:  A. Heat Affected or Eroded O-ring  B. O-ring Damage/Defects?	<b>)</b> ?		Yes	No C	Comment #
Secondary O-ring Observations:  A. Heat Affected or Eroded O-ring  B. O-ring Damage/Defects?	j?	- -		v v	
Notes / Comments					
Proliminary PFAR(s)?Yes	No	Preliminary PFAR N	lumber(s): _		
rification Form(s)?Yes	No	Clarification Form	Page No.(s):		<del></del>
REVISION		DOC NO.	ΓWR-64222   PAG	∨oL <sup>E</sup> B-28	_

## POSTFLIGHT OBSERVATION RECORD (PFOR) B-1 Leak Check Plug/SII and Port Condition (At Removal)

Motor No.: 360L029	Side: Left (A)	Date:	27 T	in 93
Assessment Engineer(s)/Inspector	(a): Jeff Haberstich Bill F	0.100 4.000		
Location: Aft End Ring-to-Fixed H		<u> </u>		
Leak Check Plug Observations:		Yes	No	Comment #
A. Sooted Metal Surfaces?				Comment #
B. Soot To or Past O-ring?	_	<del></del>	<u></u>	
C. Foreign Material?			<u></u>	
D. O-ring Damage (In Groove)	?		V	
E. Heat Affected or Eroded O-	The state of the s		~	
F. Excessive or No Grease on	O-ring?		<u></u>	
G. Excessive Grease on Plug?				
H. Corrosion?	·			
I. Thread Damage (Visible at	Removal)?	<del></del>		
Leak Check Port Observations:				
J. Sooted Metal Surfaces?			/	
K. Foreign Material?				
L. Excessive Grease?	<del></del>			
M. Corrosion?	<del></del>	$\overline{V}$		
N. Metal Damage?			1_	
O. Heat Affected Metal?	_		レ	
P. Obstructed Through Hole?			レー	
Notes / Comments				
Breakaway torque	; 35 in-16			
Running terra ue:	8 in-165 was observed on part spec			
		Hora		
(1,) Medium Corrosian	was observed on point special	,,,,,		
Preliminary PFAR(s)?Yes	No Preliminary PFAR N	umber(s):		
ification Form(s)?Yes	No Clarification Form P	age No.(s	):	
REVISION	DOC NO. T	WR-6422	2 VOL	
	SEC	P	AGE B-29	<del></del> _



## POSTFLIGHT OBSERVATION RECORD (PFOR) B-4 Leak Check Plug/Sil Condition (Detailed)

Motor No.: 360L029	Side: Left (A)	Date: 2	7 January 1993
Assessment Engineer(s)/Inspector(	8): Jeff Haberstich Bill		
Location: Aft End Ring-to-Fixed H	,		
Leak Check Plug Observations:  A. Foreign Material Between th  B. Heat Affected Metal?			Comment #
C. Seal Surface/Thread Damag	<b>e</b> ?		
Notes / Comments			
		·	
	,		
Ptiminary PFAR(s)?Yes	No Preliminary P	FAR Number(s):	
YesYes	No Clarification	Form Page No.(s): _	
REVISION	DOC N SEC		B-30



## POSTFLIGHT OBSERVATION RECORD (PFOR) B-6 Small Diameter (Leak Check Plug/SII) O-ring Condition (Detailed)

Motor No.: 360L029	Side: Left (A)		Date:	27	Sunuary 1993
Assessment Engineer(s)/Inspector(	(s): Jeff Haber	rstich, Bill F	erquson		
Location: Aft End Ring-to-Fixed H					
Secondary O-ring Observations:  A. Heat Affected or Eroded O-B. O-ring Defects/Damage?	ring?	-	Yes -	No V	Comment #
Notes / Comments					
•					
		•			
•					
P-eliminary PFAR(s)? Yes	No No	Preliminary PFAR N	lumber(s):		
Yes	No	Clarification Form i	Page No.(s	):	
REVISION		DOC NO.	FWR-6422	2 voi	

## POSTFLIGHT OBSERVATION RECORD (PFOR) B-8 Packing With Retainer Condition (Detailed)

Motor No.: 360L029	Side: Left (A)	Date: 27 Jan 93				
Assessment Engineer(s)/Inspector	(8): Jeff Hulzishah,					
Joint: Aft End Ring-to-Fixed Housing (Joint #5)						
Packing With Retainer Observation  A. Heat Affected or Eroded Se  B. Seal or Retainer Damage/D  C. Corrosion?	eal or Retainer?	Yes No Comment #				
Notes / Comments						
	packings with relainers	had typizal disussy				
NUTE: NO M	CIAL DIMMAGE WAS OBSER	WED				
speck of la (1) ALL 72 pack damage to the Note: No meta (2.) 29 packings	He retainer was observed.  Kings with retainers had elastomer. I damage was observed.  with retainers were of our on the O.D.	•				
P-eliminary PFAR(s)? Yes		PFAR Number(s):				
arification Form(s)?Yes	No Clarification	Form Page No.(s):				
REVISION	DOC	NO. TWR-64222 VOL PAGE B-32				

Motor No.: 360L029	Side: Left (A)		Date: 5-17	-93
Assessment Engineer(s)/Inspector	(s): G. RICH			
Factory Joint: Forward Dome				
Case Factory Joint Observations:  A. Heat Affected or Eroded Jo B. Heavy Corrosion in Joint? C. Heavy Corrosion in Leak Ch	neck Port?	_	No No	Comment #
Note: Heavy corrosion is defir corrosion to determine hardware. A cloth dam the corrosion. Corrosio	if pitting has occurred; pened with solvent or	; however, care sh green Scotch-Brite	ould be taken no	t to damage the
Notes / Comments	O RING C			<b>y.</b>
Preliminary PFAR(s)?Yes		liminary PFAR Num		
REVISION	No Clar	DOC NO. TW	R-64222 VOL	

#### Thickol corporation SPACE OPERATIONS

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Motor No.: 360L029	Side: Left (A		Date: 0	-18-93	
Assessment Engineer(s	)/Inspector(s): Schenck				
Factory Joint: Forward					
Case Factory Joint Obs  A. Heat Affected of B. Heavy Corrosion	r Eroded Joint O-ring?	Y	es N	o Comm	nent #
	in Leak Check Port?			1	
corrosion to hardware. A	sion is defined as corrosion determine if pitting has occurred with solve on. Corrosion removal is to	curred; however, care shant or green Scotch-Brite	nould be take a <sup>®</sup> pads may	on not to dame	ge the
Notes / Comments					
	<b>-</b> .				
					,
			•		
					:
					•
minary PFAR(s)?	YesNo	Preliminary PFAR Nu	mber(s);	,	
Crarification Form(s)?	YesNo	Clarification Form Pa	nge No.(s); _		
revision		DOC NO. TO	WR-64222	VOL B-34-	

Motor No.: 360L029	Side: Left (A)	Date:	8.3-9	2
Assessment Engineer(s)/Inspector	(s): (7. R)(1) FR	rc HAY		
Factory Joint: Forward Center	11 H / 2/)	17/1	<del></del>	
Case Factory Joint Observations:  A. Heat Affected or Eroded Jo B. Heavy Corrosion in Joint? C. Heavy Corrosion in Leak Ch	-	Yes	No.	Comment #
corrosion to determine hardware. A cloth dam	ned as corrosion that causes pitting, if pitting has occurred; however, capened with solvent or green Scotch on removal is to be done in a circum	are should be Brite® pade	e taken not s may be us	to damage the
Notes / Comments		-		
NONE				
				i
				:
Preliminary PFAR(s)? Yes	No Preliminary PFAF	R Number(s)	;	
Curification Form(s)?Yes	No Clarification Form	n Page No.(	s):	
REVISION	DOC NO.	TWR-6422	PAGE B-35	<del></del>



Motor No.: 360L029	Side: Left (A)	Date: 07.27.93	
Assessment Engineer(s)/Inspector	(s): Schenck_		
Factory Joint: Aft Center			
corrosion to determine hardware. A cloth dan	heck Port?  ned as corrosion that cau  if pitting has occurred; in  npened with solvent or gr	Yes No Comment  uses pitting. It may be necessary to remove however, care should be taken not to damage to reen Scotch-Brite® pads may be used to remove in a circumferential direction only.	— —
Notes / Comments			
Preliminary PFAR(s)?Yes	No Preli	iminary PFAR Number(s):	
Carification Form(s)? Yes	B No Clari	ification Form Page No.(s):	
REVISION		DOC NO. TWR-64222 VOL SEC PAGE B-36	

Motor No.: 360L029	Side: Left (A)	Date: 4.27.93
Assessment Engineer(s)/Inspector	(8): GARY ASPER	
Factory Joint: ET Attach/Stiffene		
corrosion to determine hardware. A cloth dam	neck Port?  ned as corrosion that causes pitting if pitting has occurred; however,	Yes No Comment #
Notes / Comments		
	4	
Preliminary PFAR(s)?Yes  C.arification Form(s)?Yes		AR Number(s):/A
REVISION	DOC NO	TWR-64222 VOL

. Thickol corporation SPACE OPERATIONS

Motor No.: 360L029	Side: Left (A)	Date:	4.27.9	<sup>?</sup> 3
Assessment Engineer(s)/Inspector	(8): GARY ASPER			
Factory Joint: Stiffener/Stiffener				
Case Factory Joint Observations:  A. Heat Affected or Eroded Jo B. Heavy Corrosion in Joint?	pint O-ring?	Yes	No V	Comment #
C. Heavy Corrosion in Leak Ch	neck Port?			
corrosion to determine hardware. A cloth dam	ned as corrosion that causes pitting if pitting has occurred; however, apened with solvent or green Scoton removal is to be done in a circ	care should be ch-Brite® pads	taken not may be us	to damage the ed to remove
Notes / Comments				
N/A	·			
Preliminary PFAR(s)? Yes	No Preliminary P	FAR Number(s)	. <u>م/</u> رر :	
Carification Form(s)? Yes	No Clarification F	Form Page No.(	s):/A	
REVISION	DOC N SEC		PAGE B-38	



Motor No.: 360L029	Side: Left (A)	Date:	4.27.93	
Assessment Engineer(s)/Inspector	(8): GARY ASPER			
Factory Joint: Aft Dome				
Case Factory Joint Observations:  A. Heat Affected or Eroded Jo	oint O-ring?	Yes	No V	Comment #
<ul><li>B. Heavy Corrosion in Joint?</li><li>C. Heavy Corrosion in Leak Cl</li></ul>	hools Bowl			<del>/</del>
C. Heavy Corresion in Leak C.	neck Port?			
corrosion to determine hardware. A cloth dam	ned as corrosion that causes pitti if pitting has occurred; however, apened with solvent or green Sco- on removal is to be done in a circ	care should be tch-Brite <sup>®</sup> pads	taken not may be us	to damage the sed to remove
Notes / Comments				
N/A				
Preliminary PFAR(s)? Yes	No Preliminary P	PFAR Number(s)	::	4
Carification Form(s)?Yes	No Clarification	Form Page No.(	s): <u>~/</u> ^	
REVISION	DOC N		PAGE B-39	<del></del>

# POSTFLIGHT OBSERVATION RECORD (PFOR) B-2 S&A Device (Barrier-Booster and Environmental Seal Regions). Condition

Motor No.: 360L029	Side: Right (B)		Date: //	5.4173	
Assessment Engineer(s)/Inspector	(s): Garecht	Bartell. Ta	vler		
Barrier-Booster Bore and Rotor Ob  A. Heat Affected or Eroded O			/es	No	Comment #
B. Soot To or Past O-rings?			<del></del>	<u> </u>	
C. Heat Affected Metal?				V	
D. O-ring Damage (In Groove)	?				
E. Metal Damage?					
F. Excessive or No Grease?					
G. Corrosion?				<u> </u>	
H. Foreign Material?		<del></del>		V	
I. Teflon Retainer Damage?				1/	
Environmental Seal Region Observ	ations:				
J. Environmental O-ring Asser		<b>a</b>			
Without Magnification)?	,	-		V//	
K. Foreign Material?					
		<del></del>			<del></del>
s / Comments					
•					
•					
	,				
Preliminary PFAR(s)? Yes	No	Preliminary PFAR Nu	ımber(s):		
fication Form(s)?Yes	No	Clarification Form Pa	age No.(s):		
REVISION		DOC NO. T	WR-64222	VOL	
		SEC	PAG	E B-40	_

# POSTFLIGHT OBSERVATION RECORD (PFOR) B-7 S&A Rotor Shaft O-ring Condition (Detailed)

Motor No.: 380L029	Side: Right (B		Date:	112 13	
Assessment Engineer(s)/Inspector	(s): D. (2016)	d Dibartoll	6 Ta	1	
Location: S&A Device Barrier	r-Booster Rotor Sh	aft			-
Forward Primary O-ring Observation	ons:		Yes	No	Comment #
A. Heat Affected or Eroded O	-ring?			1	
B. O-ring Defects/Damage?		<del>-</del>		i/	
Aft Primary O-ring Observations:					
C. Heat Affected or Eroded O	-ring?				
D. O-ring Defects/Damage?				V	
Forward Secondary O-ring Observa	ations:				
E. Heat Affected or Eroded O-				V	
F. O-ring Defects/Damage?	-		<del></del> .		
Aft Secondary O-ring Observations	:				
G. Heat Affected or Eroded O-				1/	
H. O-ring Defects/Damage?		_			
Notes / Comments	<del></del>				
					:
	/				
Preliminary PFAR(s)?Yes	No	Preliminary PFAR N	umber(s):		
Yes	/_ No	Clarification Form P	Page No.(s	):	
REVISION		DOC NO. T	WR-64222	VOL	
_ <del></del>		SEC	PA	GE B-41	<del></del>
			•		

#### POSTFLIGHT OBSERVATION RECORD (PFOR) B-1 Leak Check Plug/SII and Port Condition (At Removal)

Motor No.: 360L029	Side: Right (B)	Date:	1125193	
Assessment Engineer(s)/Inspector(	(s): D. Gare I.t. D. Bur	4.17	CTu)	de
Location: 126-Degree Barrier-Boo		7		
Leak Check Plug Observations:		Yes	No.	Comment #
A. Sooted Metal Surfaces?		. ••	140	Comment #
B. Soot To or Past O-ring?	•			
C. Foreign Material?	•			
D. O-ring Damage (in Groove)	?			<del></del>
E. Heat Affected or Eroded O-	ring (In Groove)?		$\frac{1}{V}$	<del></del>
F. Excessive or No Grease on	O-ring?		i/	
G. Excessive Grease on Plug?	•		V	
H. Corrosion?	•	<del></del>	1/	
I. Thread Damage (Visible at	Removal)?			
Leak Check Port Observations:				
J. Sooted Metal Surfaces?				
K. Foreign Material?	-		<del></del>	
L. Excessive Grease?	-	<del></del>	<u>/-</u>	
M. Corrosion?	-	<del></del>	<del></del>	——————————————————————————————————————
N. Metal Damage?	-	<del></del>	<del></del>	
O. Heat Affected Metal?	-		<del>//</del> /	
P. Obstructed Through Hole?	•		<del>-//</del>	
Notes / Comments				
	/			
Preliminary PFAR(s)? Yes	No Preliminary PFAR	Number(s)	:	
Yes	/_ No Clarification Form	Page No.(	s):	
DEMISION	DOC NO.	TWR-6422	2   VOL	
REVISION	SEC		PAGE B-42	



## POSTFLIGHT OBSERVATION RECORD (PFOR) B-4 Leak Check Plug/SII Condition (Detailed)

Motor No.: 360L029	Side: Right (B)	Date: // 2.7/	93
Assessment Engineer(s)/Inspector	(s): D. Garacht D.B	artell C. Tayi	(6)-
Location: 126-Degree Barrier-Boo	•		,
Leak Check Plug Observations:  A. Foreign Material Between t  B. Heat Affected Metal?  C. Seal Surface/Thread Damag		Yes No	Comment #
Notes / Comments			
Pliminary PFAR(s)? Yes	No Preliminary F	PFAR Number(s):	
Curification Form(s)? Yes	No Clarification	Form Page No.(s):	
REVISION	DOC I	NO. TWR-64222 VC	<del></del>



## POSTFLIGHT OBSERVATION RECORD (PFOR) B-6 Small Diameter (Leak Check Plug/SII) O-ring Condition (Detailed)

Motor No.: 360L029	Side: Right (B)	Date: 11.5 × 10%
Assessment Engineer(s)/Inspector(	(s): D. Gurcht, D. Par	rtalt a Taring
Location: 126-Degree Barrier-Boo	,	Ĵ
Secondary O-ring Observations:  A. Heat Affected or Eroded O-B. O-ring Defects/Damage?	-ring?	Yes No Comment #
Notes / Comments		
,		
	1	
Proliminary PFAR(s)? Yes	sNo Preliminary PFAR	R Number(s):
Curification Form(s)?Yes	8 No Clarification Form	n Page No.(s):
REVISION	DOC NO.	TWR-64222 VOL



#### POSTFLIGHT OBSERVATION RECORD (PFOR) B-1 Leak Check Plug/SII and Port Condition (At Removal)

Motor No.: 360L029	Side: Right (B)	Date: // 27 / 27	2
Assessment Engineer(s)/Inspector	(s): D. Game AND Barto	H Carall	11
Location: 18-Degree SII			
Sil Observations:		Yes No	Comment #
A. Sooted Metal Surfaces?	. <u> </u>		
B. Soot To or Past O-ring?			
C. Foreign Material?			
D. O-ring Damage (In Groove)	?	<u></u>	
E. Heat Affected or Eroded O-	ring (In Groove)?		
F. Excessive or No Grease on	O-ring?		
G. Excessive Grease on SII?	·		
H. Corrosion?	_		
I. Thread Damage (Visible at	Removal)?		
SII Port Observations:		<i>y</i>	
J. Sooted Metal Surfaces?	_		
K. Foreign Material?			
L. Excessive Grease?			
M. Corrosion?	-		
N. Metal Damage?			
O. Heat Affected Metal?			
P. Obstructed Leak Check Thr	rough Hole?		
Notes / Comments			
			;
Preliminary PFAR(s)? Yes	No Preliminary PFAR N	umber(s):	
ification Form(s)? Yes			
.,			
	DOC NO.	TWR-64222 VOL	
REVISION	SEC	PAGE B-45	



## POSTFLIGHT OBSERVATION RECORD (PFOR) B-4 Leak Check Plug/SII Condition (Detailed)

Motor No.: 360L029	Side: Right (B)	Date: // ≤ ♀	173
Assessment Engineer(s)/Inspector	(8): Deferrent Depar	tell, C.Ta	1121-
Location: 18-Degree SII	, , , , , , , , , , , , , , , , , , , ,		
SII Observations:  A. Foreign Material Between t  B. Heat Affected Metal?  C. Seal Surface/Thread Dama		Yes No	Comment #
Notes / Comments			
•			
			!
Preliminary PFAR(s)? Yes	No Preliminary PF	AR Number(s):	
ification Form(s)? Yes	No Clarification Fo	orm Page No.(s):	
REVISION	DOC NO	TWR-64222	vol



## POSTFLIGHT OBSERVATION RECORD (PFOR) B-6 Small Diameter (Leak Check Plug/SII) O-ring Condition (Detailed)

Motor No.: 360L029	Side: Right (B)	Date:	112819	3
Assessment Engineer(s)/Inspector	(s): Carecht 1	Parta H. Tay	100	
Location: 18-Degree SII	,	J	· · · · · · · · · · · · · · · · · · ·	
Primary O-ring Observations:  A. Heat Affected or Eroded O B. O-ring Defects/Damage?	-ring?	Yes	No ×	Comment #
Secondary O-ring Observations:  C. Heat Affected or Eroded O  D. O-ring Defects/Damage?	-ring?			/ <del></del>
Notes / Comments				•
Taliminary PFAR(s)?Yes	No Prelir	ninary PFAR Number(s	·):	
ciarification Form(s)? Yes	No Clarif	ication Form Page No.	(s):	
revision		DOC NO. TWR-642	PAGE B-47	<del></del>



#### POSTFLIGHT OBSERVATION RECORD (PFOR) B-1 Leak Check Plug/SII and Port Condition (At Removal)

Motor No.: 360L029	Side: Right (B)		ite: //2/2//	13
Assessment Engineer(s)/Inspector	(s): DGare Cht	D. Barto	14 1 To	11/6-
Location: 198-Degree SII		,	7	
SII Observations:		Yes	No,	Comment #
A. Sooted Metal Surfaces?		<del> </del>	<u> </u>	
B. Soot To or Past O-ring?				
C. Foreign Material?			<u> </u>	
D. O-ring Damage (In Groove)	?	<del></del>	<u> </u>	
E. Heat Affected or Eroded O-	ring (in Groove)?			
F. Excessive or No Grease on	O-ring?			
G. Excessive Grease on SII?				
H. Corrosion?				
I. Thread Damage (Visible at	Removal)?			
Sil Port Observations:			. /	
J. Sooted Metal Surfaces?				
K. Foreign Material?		-		
L. Excessive Grease?			_ <del></del>	
M. Corrosion?				
N. Metal Damage?			<u> </u>	
O. Heat Affected Metal?			- <u>V</u>	
P. Obstructed Leak Check Th	rough Hole?			
Notes / Comments				
·				
•				
Thiminary PFAR(s)?Ye	s No Pre	liminary PFAR Numb	er(s):	
rification Form(s)?Ye	s // No Cla	rification Form Page	No.(s):	
REVISION		DOC NO. TWR	-64222 VOL	
		SEC	PAGE B-48	



## POSTFLIGHT OBSERVATION RECORD (PFOR) B-4 Leak Check Plug/SII Condition (Detailed)

Motor No.: 360L029	Side: Right (B)	Date:	110.2198	
Assessment Engineer(s)/Inspector(s	B): L. Garre Mt	71. Bo, to 14	C 70 111	
Location: 198-Degree SII	,			· · · · · · · · · · · · · · · · · · ·
Sil Observations:  A. Foreign Material Between th  B. Heat Affected Metal?  C. Seal Surface/Thread Damage		Yes	No Comm	nent #
Notes / Comments				
		,		
				•
	•			
		·		
YesYes	No Prelim	ninary PFAR Number(s)	:	
Ciarification Form(s)?Yes	No Clarifi	cation Form Page No.(	s):	
REVISION		DOC NO. TWR-6422	22 VOL	
			PAGE B-49	



#### POSTFLIGHT OBSERVATION RECORD (PFOR) B-6 Small Diameter (Leak Check Plug/SII) O-ring Condition (Detailed)

Motor No.: 360L029	Side: Right (B)	Date: 1191197
Assessment Engineer(s)/Inspector(	(s): Degrecht Dag	tell CTaller
Location: 198-Degree SII		, ,
Primary O-ring Observations:  A. Heat Affected or Eroded O-B. O-ring Defects/Damage?		es No Comment #
Secondary O-ring Observations:  C. Heat Affected or Eroded O- D. O-ring Defects/Damage?	-ring?	
Notes / Comments		
'iminary PFAR(s)?Yes	No Preliminary PFAR Nu	ımber(s):
Clarification Form(s)?Yes	No Clarification Form Pa	age No.(s):
REVISION	DOC NO. T	WR-64222 VOL



#### POSTFLIGHT OBSERVATION RECORD (PFOR) B-3 Internal Nozzle Joint Condition

Motor No.: 360L029	Side: Right (B)	Date: 28 January 1993			
Assessment Engineer(s)/Inspector(s): Jeff Hoberstich Dave Bartelt Bob Quick					
Joint: Nose Inlet-to-Flex Bearing-to-Cowl (Joint #2)					
Internal Nozzie Joint Observations:  A. Soot To or Past O-rings?  B. Heat Affected Metal?  C. Foreign Material?  D. RTV in Contact With or Past  E. O-ring Damage (In Groove)  F. Heat Affected or Eroded Office G. Excessive or No Grease?  H. Corrosion?  I. Metal Damage?	st the Primary O-ring?	Yes No Comment #			
from 156° to 17  (2) Light-to-medium the primary O- nose and former	I shaped scoting was observed ace with soot reaching the 4° and from 204° to 0°+, corrosism/oxidation was ring location full circumbed and ring. marks due to disassembly on the nose inlet housing e.	observed outboard of Gerence on both the			
~-eliminary PFAR(s)? Yes	No Clarification Form F	Page No.(s):			
REVISION	SEC	PAGE B-51			



## POSTFLIGHT OBSERVATION RECORD (PFOR) B-5 Large Diameter (Joint) O-ring Condition (Detailed)

Motor No.: 360L029	Side: Right (B)	Da	ate: / 3 × 17 3		
Assessment Engineer(s)/Inspector(s): Diana Employ Dianate					
Joint: Nose Inlet-to-Flex Bearing-to-Cowl (Joint #2)					
Primary O-ring Observations:  A. Heat Affected or Eroded O  B. O-ring Damage/Defects?	-ring?	Yes	No V	Comment #	
Secondary O-ring Observations:  A. Heat Affected or Eroded O  B. O-ring Damage/Defects?	-ring?				
Notes / Comments					
Caliminary PFAR(s)?Yes	No Pre	eliminary PFAR Numb	er(s):		
Carification Form(s)?Yes	No Cla	rification Form Page	No.(s):		
REVISION		DOC NO. TWR-	-64222 VOL		



#### POSTFLIGHT OBSERVATION RECORD (PFOR) B-1 Leak Check Plug/Sil and Port Condition (At Removal)

Motor No.: 360L029	Side: Right (B)	Date: 28 J	gnuary 1993			
Assessment Engineer(s)/Inspector	(s): Jeff Haberstich					
Location: Nose Inlet-to-Flex Bearing-to-Cowl (Joint #2)						
Leak Check Plug Observations:  A. Sooted Metal Surfaces?		Yes No	Comment #			
<ul><li>B. Soot To or Past O-ring?</li><li>C. Foreign Material?</li><li>D. O-ring Damage (In Groove)</li></ul>						
E. Heat Affected or Eroded O- F. Excessive or No Grease on	ring (In Groove)?					
<ul><li>G. Excessive Grease on Plug?</li><li>H. Corrosion?</li><li>I. Thread Damage (Visible at</li></ul>	_					
Leak Check Port Observations: J. Sooted Metal Surfaces?						
<ul><li>K. Foreign Material?</li><li>L. Excessive Grease?</li><li>M. Corrosion?</li></ul>						
N. Metal Damage? O. Heat Affected Metal? P. Obstructed Through Hole?		レ レ レ				
Notes / Comments  Breakaway torque: Running torque:	50 in-16s 25 in-16s					
·						
Parliminary PFAR(s)? Yes	No Preliminary PFAR N	łumber(s):				
Yes	No Clarification Form	Page No.(s):				
REVISION	DOC NO.	TWR-64222	/OL			



## POSTFLIGHT OBSERVATION RECORD (PFOR) B-4 Leak Check Plug/SII Condition (Detailed)

Motor No.: 360L029	Side: Right (B)	Dates	1,3543		
Assessment Engineer(s)/Inspector	(s): Dan Gares	hi Dei Bark			
Location: Nose Inlet-to-Flex Bearing-to-Cowl (Joint #2)					
Leak Check Plug Observations:  A. Foreign Material Between t  B. Heat Affected Metal?  C. Seal Surface/Thread Dama		Yes	No V	Comment #	
Notes / Comments					
	•				
Preliminary PFAR(s)?Yes	No Prelii	minary PFAR Number(	s):		
Yes	No Clarit	ication Form Page No.	.(s):		
REVISION		DOC NO. TWR-64	222 VOL	_	



## POSTFLIGHT OBSERVATION RECORD (PFOR) B-6 Small Diameter (Leak Check Plug/SII) O-ring Condition (Detailed)

Motor No.: 360L029	Side: Right (B)		Date: /	13 13	<u>,</u>
Assessment Engineer(s)/Inspector	(s): D. Gareck	W. Dove Be			
Location: Nose Inlet-to-Flex Bearing-to-Cowl (Joint #2)					
Secondary O-ring Observations:  A. Heat Affected or Eroded O-B. O-ring Defects/Damage?	-ring?		Yes	No	Comment #
Notes / Comments			<del>-</del>		
	•				
·					
	1/				
Preliminary PFAR(s)?Yes	No No	Preliminary PFAR	Number(s):		
Yes	No	Clarification Form	Page No.(s	s):	
				. 1	
REVISION		DOC NO.	TWR-6422	2 VOL AGE B-55	
			r		



## POSTFLIGHT OBSERVATION RECORD (PFOR) B-3 Internal Nozzle Joint Condition

Motor No.: 360L029	Side: Right (B)	Date: // 92/93
Assessment Engineer(s)/inspector	(s): ) Carente P Erryce	
Joint: Nose Inlet-to-Throat (Joint		
Internal Nozzle Joint Observations:  A. Soot To or Past O-rings?  B. Heat Affected Metal?  C. Foreign Material?		Yes No Comment #
D. RTV in Contact With or Pas		<u> </u>
E. O-ring Damage (In Groove)  F. Heat Affected or Eroded O-	•	
G. Excessive or No Grease?	-rings (in Groove)?	<del></del>
H. Corrosion?		V
i. Metal Damage?		<u> </u>
Notes / Comments		
- Land of the state of the stat	A water a first	adjust to the real
	215 25 5° 218	9-17-93
Tigliminary PFAR(s)?Yes	No Preliminary PFAR	Number(s):
uarification Form(s)? Yes	No Clarification Form	Page No.(s):
REVISION	DOC NO.	TWR-64222 VOL

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#### POSTFLIGHT OBSERVATION RECORD (PFOR) B-5 Large Diameter (Joint) O-ring Condition (Detailed)

Motor No.: 360L029	Side: Right (B)	Date:			
Assessment Engineer(s)/Inspector	(8): Deanger 1 13 te	3(15)			
Joint: Nose Inlet-to-Throat (Joint #3)					
Primary O-ring Observations:  A. Heat Affected or Eroded O-B. O-ring Damage/Defects?	-ring?	Yes No Comment #			
Secondary O-ring Observations:  A. Heat Affected or Eroded O-B. O-ring Damage/Defects?	-ring?				
Notes / Comments					
Taliminary PFAR(s)? Yes	No Preliminary PFA	R Number(s):			
Garification Form(s)?Yes	No Clarification Fo	m Page No.(s):			
REVISION	DOC NO.	TWR-64222 VOL PAGE B-57			



#### POSTFLIGHT OBSERVATION RECORD (PFOR) B-1 Leak Check Plug/SII and Port Condition (At Removal)

Motor No.: 360L029	Side: Right (B)		Date: // 3		-
Assessment Engineer(s)/Inspector(	(s): 1. 6 01 60	All Park			
Location: Nose Inlet-to-Throat (J			<del>( ,                                   </del>		
Leak Check Plug Observations:  A. Sooted Metal Surfaces?  B. Soot To or Past O-ring?  C. Foreign Material?  D. O-ring Damage (In Groove)  E. Heat Affected or Eroded O-  F. Excessive or No Grease on  G. Excessive Grease on Plug?	? -ring (In Groove)? O-ring?	Y		No / / / / / / / / / / / / / / / / / / /	Comment #
H. Corrosion?				<u> </u>	
I. Thread Damage (Visible at	Removal)?			L/*	
Leak Check Port Observations:  J. Sooted Metal Surfaces?  K. Foreign Material?  L. Excessive Grease?  M. Corrosion?  N. Metal Damage?  O. Heat Affected Metal?  P. Obstructed Through Hole?					
Notes / Comments					
Fratishing All of					
1.11.12 21					
Caliminary PFAR(s)? Yes	No No	Preliminary PFAR No	umber(s): _		
C.arification Form(s)? Yes	8 <u> </u>	Clarification Form P	age No.(s): WR-64222	VOL	OF POOR PAGE

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#### POSTFLIGHT OBSERVATION RECORD (PFOR) B-4 Leak Check Plug/SII Condition (Detailed)

Motor No.: 360L029	Side: Right (B)	Date:	1.56,43	
Assessment Engineer(s)/Inspector(	(s): (7) - (1) / ( ^ / 7)	F. Paryus.		
Location: Nose Inlet-to-Throat (J	oint #3)	.7		
Leak Check Plug Observations:  A. Foreign Material Between to B. Heat Affected Metal?  C. Seal Surface/Thread Damage		Yes	No	Comment #
Notes / Comments				
	•			
liminary PFAR(s)?Yes	sNo Prelin	minary PFAR Number(s	s):	
Ciarification Form(s)? Yes	sNo Clarif	ication Form Page No.	. (s):	
REVISION		DOC NO. TWR-64	222 VOL PAGE B-59	



# POSTFLIGHT OBSERVATION RECORD (PFOR) B-6 Small Diameter (Leak Check Plug/SII) O-ring Condition (Detailed)

Motor No.: 360L029	Side: Right (B)	Date:	1128193
Assessment Engineer(s)/Inspector	(s): Danne		
Location: Nose Inlet-to-Throat (J			
Secondary O-ring Observations:  A. Heat Affected or Eroded O-B. O-ring Defects/Damage?	ring?	Yes	No Comment #
Notes / Comments			
		•	
Parliminary PFAR(s)?Yes	No Prelim	inary PFAR Number(s)	:
YesYes	No Clarific	cation Form Page No.(	s):
REVISION		DOC NO. TWR-642	22 VOL

## POSTFLIGHT OBSERVATION RECORD (PFOR) B-3 Internal Nozzle Joint Condition

Motor No.: 360L029	Side: Right (B)	Date: 26 Jan 93
Assessment Engineer(s)/Inspector	(8): Jeff Haberstah, Dave 1	
Joint: Throat-to-Forward Exit Con		, see took thouse
Internal Nozzle Joint Observations:  A. Soot To or Past O-rings?  B. Heat Affected Metal?  C. Foreign Material?  D. RTV in Contact With or Past  E. O-ring Damage (In Groove)  F. Heat Affected or Eroded O-  G. Excessive or No Grease?  H. Corrosion?  I. Metal Damage?	st the Primary O-ring? ?	Yes No Comment #
in this location	between the primary and 180°-205° and from 95	
Proliminary PFAR(s)? Yes	No Preliminary PFAR	Number(s): 54(-04
Yes	No Clarification Form	n Page No.(s):
REVISION	DOC NO.	TWR-64222 VOL

## POSTFLIGHT OBSERVATION RECORD (PFOR) B-5 Large Diameter (Joint) O-ring Condition (Detailed)

Motor No.: 360L029	Side: Right (B)	D	ate: 26 Jan 93	
Assessment Engineer(s)/Inspector	(s): Dave Bar		erstich	
Joint: Throat-to-Forward Exit Cor		,		
Primary O-ring Observations:  A. Heat Affected or Eroded O B. O-ring Damage/Defects?	-ring?	Yes	No Comment #	***************************************
Secondary O-ring Observations:  A. Heat Affected or Eroded O-B. O-ring Damage/Defects?	-ring?	<del></del>		
Notes / Comments .				
Preliminary PFAR(s)? Yes	No P	reliminary PFAR Numb	er(s):	-
Yes	No C	larification Form Page	No.(s):	
REVISION		DOC NO. TWR-	-64222 VOL PAGE B-62	

#### POSTFLIGHT OBSERVATION RECORD (PFOR) B-1 Leak Check Plug/Sil and Port Condition (At Removal)

Motor No.: 360L029	Side: Right (B)	Date:	26 J	14 93
Assessment Engineer(s)/Inspector	(6): Jeff Haberstich			
Location: Throat-to-Forward Exit				
Leak Check Plug Observations:  A. Sooted Metal Surfaces?  B. Soot To or Past O-ring?  C. Foreign Material?  P. O-ring Damage (In Groove)  E. Heat Affected or Eroded O-  F. Excessive or No Grease on  G. Excessive Grease on Plug?  H. Corrosion?  I. Thread Damage (Visible at	ring (In Groove)? O-ring?	Yes	No V V V V V V	Comment #
Leak Check Port Observations:  J. Sooted Metal Surfaces?  K. Foreign Material?  L. Excessive Grease?  M. Corrosion?  N. Metal Damage?  O. Heat Affected Metal?  P. Obstructed Through Hole?				1
Running torque  Breakaway torque  Running torque  D Light-to-medium  Spotface for app	: 37 m-lbs : 12 m-lbs : corrosian was obser proximately 0.1" circum	ved on ference	port	
Preliminary PFAR(s)? Yes				
Yes	No Clarification Form	n Page No.(s	s):	
REVISION	DOC NO.	TWR-6422	2 VOL AGE B-63	<del></del>

## POSTFLIGHT OBSERVATION RECORD (PFOR) B-4 Leak Check Plug/SII Condition (Detailed)

Motor No.: 360L029	Side: Right (B)	Date: 26	San 93		
Assessment Engineer(s)/Inspector(	(s): Jeff Haboustick				
Location: Throat-to-Forward Exit Cone (Joint #4)					
Leak Check Plug Observations:  A. Foreign Material Between the B. Heat Affected Metal?  C. Seal Surface/Thread Damag		Yes No	Comment #		
Notes / Comments					
•					
Niminary PFAR(s)? Yes	No Preliminary P	FAR Number(s):			
Clarification Form(s)? Yes	No Clarification F	Form Page No.(s):			
REVISION	DOC N	PAGE B-	VOL		



## POSTFLIGHT OBSERVATION RECORD (PFOR) B-6 Small Diameter (Leak Check Plug/SII) O-ring Condition (Detailed)

Motor No.: 360L029 Side: Right (B)		Date: 26 7	an 93
Assessment Engineer(s)/Inspector(s): Jeff Hal	xerstah		
Location: Throat-to-Forward Exit Cone (Joint #4)			
Secondary O-ring Observations:  A. Heat Affected or Eroded O-ring?  B. O-ring Defects/Damage?	Ye	8 No	Comment #
Notes / Comments			
			·
_			
No Yes No	Preliminary PFAR Num	iber(s):	
Garification Form(s)?Yes	Clarification Form Pag	e No.(s):	
		1	
REVISION	DOC NO. TW	R-64222 VOI	<del></del>
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# POSTFLIGHT OBSERVATION RECORD (PFOR) B-3 Internal Nozzle Joint Condition

Motor No.: 360L029	Side: Right (B)	Date:	26 January 73		
Assessment Engineer(s)/Inspector	(8): Jeff Haberstich				
Joint: Aft End Ring-to-Fixed Hou					
Internal Nozzle Joint Observations:  A. Soot To or Past O-rings?  B. Heat Affected Metal?		Yes	No Comment #	<u> </u>	
C. Foreign Material?			<u> </u>	_	
D. RTV in Contact With or Particle E. O-ring Damage (In Groove)				_	
F. Heat Affected or Eroded O				-	
G. Excessive or No Grease?			<u> </u>	_	
H. Corrosion?			2	_	
I. Metal Damage?		***	<u></u>	_	
Notes / Comments			· · · · · · · · · · · · · · · · · · ·		
Notes / Comments  (1) RTU was observed in contact with the primary 0-ring from 2600 1300 and from 2450 to 2570 400-200, 1300 and 2200-2500 400 to 1000 1300 and 2200-2500 was observed on the aft end ring and fill circumference.  Light corrosion was observed on the followingstat-o-scal spotfoces 1300, 1550, 1600, 1650, 1700, 2150, 2450.  Medium to heavy corrosion was observed on the aftered ring flunge ID for intermittently from 15000-000-8000.					
Toliminary PFAR(s)? Yes	No Prelimi	nary PFAR Number(s)	):		
Carification Form(s)? Yes	No Clarific	ation Form Page No.(	s):		
REVISION		DOC NO. TWR-6422	PAGE B-66		



# POSTFLIGHT OBSERVATION RECORD (PFOR) B-5 Large Diameter (Joint) O-ring Condition (Detailed)

Motor No.: 360L029 Side: Rig	jht (B)	Date: 2	7 Jan	73	
Assessment Engineer(s)/Inspector(s): Jeff	- Haberstich Bill	_			
Joint: Aft End Ring-to-Fixed Housing (Joint #5)					
Primary O-ring Observations:  A. Heat Affected or Eroded O-ring?		Yes		Comment #	
B. O-ring Damage/Defects?				<del></del>	
Coonday Origo Observations					
Secondary O-ring Observations:  A. Heat Affected or Eroded O-ring?			u		
B. O-ring Damage/Defects?	<del></del>		<u> </u>		
Notes / Comments		<del></del>			
•					
Taliminary PFAR(s)?YesN	lo Preliminary PFAR N	lumber(s): _			
Jarification Form(s)?Yes	lo Clarification Form I	Page No.(s):			
REVISION		ΓWR-64222	VOL		
	SEC	PAC	B-67		

# POSTFLIGHT OBSERVATION RECORD (PFOR) B-1 Leak Check Plug/SII and Port Condition (At Removal)

Motor No.: 360L029	Side: Right (B)		Date: 27 Ja	n 93
Assessment Engineer(s)/Inspector(	(s): Jeff Hab	erstich		
Location: Aft End Ring-to-Fixed H				
Leak Check Plug Observations:  A. Sooted Metal Surfaces? B. Soot To or Past O-ring? C. Foreign Material? D. O-ring Damage (In Groove) E. Heat Affected or Eroded O- F. Excessive or No Grease on G. Excessive Grease on Plug? H. Corrosion? I. Thread Damage (Visible at	ring (In Groove)? O-ring?	Y	es No V V V V V V V V	Comment #
Leak Check Port Observations:  J. Sooted Metal Surfaces?  K. Foreign Material?  L. Excessive Grease?  M. Corrosion?  N. Metal Damage?  O. Heat Affected Metal?  P. Obstructed Through Hole?				
Notes / Comments  Breakauay tarque Running tarque		Preliminary PFAR Nu	ımber(s):	
Yes		Clarification Form Pa		
REVISION		DOC NO. TY	WR-64222 VOL	



### POSTFLIGHT OBSERVATION RECORD (PFOR) B-4 Leak Check Plug/SII Condition (Detailed)

Motor No.: 360L029	Side: Right (B)	Date:	27 Jav	ruary 93
Assessment Engineer(s)/Inspector	(s): Jeff Habers	boh, Bill Fergus		
Location: Aft End Ring-to-Fixed h	lousing (Joint #5)			
Leak Check Plug Observations:  A. Foreign Material Between to B. Heat Affected Metal?  C. Seal Surface/Thread Damas		Yes	No V	Comment #
	-			
Notes / Comments				
•	•			
	_			
Yes Yes	No Pre	eliminary PFAR Number(s	):	
Garification Form(s)? Yes	No Cla	arification Form Page No.	(s):	
			. 1	
REVISION		DOC NO. TWR-642	PAGE B-69	<u></u>

# POSTFLIGHT OBSERVATION RECORD (PFOR) B-6 Small Diameter (Leak Check Plug/SII) O-ring Condition (Detailed)

Motor No.: 360L029	Side: Right (B)	Date	* 27 丁	anuary 1993
Assessment Engineer(s)/Inspector(s	s): Jeff Habertich	Bill Forgu		
Location: Aft End Ring-to-Fixed H	ousing (Joint #5)			
Secondary O-ring Observations:  A. Heat Affected or Eroded O-ring Defects/Damage?	ing?	Yes	No V	Comment #
Notes / Comments				
damage to the	kings with retained tastomer.  Lamage was observe	d_	al disasso	mbly
-(2)				
Thiminary PFAR(s)? Yes	No Prelim	inary PFAR Number	(s):	
Cidrification Form(s)?Yes	No Clarific	ation Form Page No	o.(s):	
REVISION		DOC NO. TWR-64	1222 VOL PAGE B-70	

# POSTFLIGHT OBSERVATION RECORD (PFOR) B-8 Packing With Retainer Condition (Detailed)

Motor No.: 360L029	Side: Right (B)	Date:	27 January 1993			
Assessment Engineer(s)/Inspector	(8): Jeff Haberstah	<u> </u>	isin			
Joint: Aft End Ring-to-Fixed		<del></del>				
Packing With Retainer Observation  A. Heat Affected or Eroded Se  B. Seal or Retainer Damage/D  C. Corrosion?	eal or Retainer?	Yes	No Comment #			
Notes / Comments	Notes / Comments					
Note: No met	ings with retainers had elastomer.  al damage was observed he retainer was observed corrosion on its face	!.				
aliminary PFAR(s)?Yes	No Preliminary F	FAR Number(	s):			
Clarification Form(s)?Yea	No Clarification	Form Page No	.(s):			
REVISION	DOC 1	NO. TWR-64	222 VOL PAGE B-71			

### Thickol corporation SPACE OPERATIONS

Motor No.: 360L029	Side: Right (B)	Date: 5.28-8	23	
Assessment Engineer(s)/Inspector	(s): G. RICH			
Factory Joint: Forward Dome			· · · · · · · · · · · · · · · · · · ·	
	neck Port? ned as corrosion that causes pitt	Ing. It may be necessary to re		
corrosion to determine if pitting has occurred; however, care should be taken not to damage the hardware. A cloth dampened with solvent or green Scotch-Brite® pads may be used to remove the corrosion. Corrosion removal is to be done in a circumferential direction only.				
Notes / Comments No	bNE			
Special Issue 3.2.3.1				
•				
		•		
			•	
Preliminary PFAR(s)?Yes	No Preliminary I	PFAR Number(s):	NE	
	No Clarification	Form Page No.(s): None	•	
revision	SEC	NO. TWR-64222 VOL	-	

Date: 5-28-93

### Thickol CORPORATION

Assessment Engineer(s)/Inspector(s):

SPACE OPERATIONS

Motor No.: 380L029

#### POSTFLIGHT OBSERVATION RECORD (PFOR) B-9 Case Factory Joint Condition

Right (B)

Side:

Factory Joint: Fon	ward				-	
B. Heavy Corros C. Heavy Corros Note: Heavy co	d or Eroded Joir sion in Joint? sion in Leak Che prosion is define to determine if	ck Port? od as corrosion pitting has occ	that causes pitting. curred; however, ca nt or green Scotch	re should be	taken not	to damage the
the corro	sion. Corrosion	removal is to b	pe done in a circun	nferential dire	ection only.	ed to remove
Notes / Comments	NONE	_				
		_				
				· .		
·						
P pary PFAR(s)?	Yes	No	Preliminary PFAF	R Number(s):	Non	€
charification Form(s)	?Yes	No	Clarification Forr	n Page No.(s	i): No	ME
revision			DOC NO.	TWR-6422	2 VOL	3

Motor No.: 360L029	Side: Right (B)	Date:	09-15-	93
Assessment Engineer(s)/Inspector	(S): WADE LARDON			
Factory Joint: Forward Center				
Case Factory Joint Observations:  A. Heat Affected or Eroded J.  B. Heavy Corrosion in Joint?	-	Yes	No V	Comment #
C. Heavy Corrosion in Leak C	heck Port?			<del></del>
corrosion to determine hardware. A cloth dan the corrosion. Corrosi	ined as corrosion that causes pi if pitting has occurred; howeven pened with solvent or green So on removal is to be done in a c	r, care should be otch-Brite® pads	taken not to may be use	to damage the ed to remove
Notes / Comments NONE				
Preliminary PFAR(s)? Yes	No Preliminary	PFAR Number(s)	: <u>M/A</u>	
c.arification Form(s)? Yes	No Clarification	Form Page No. (	s): <u>N/A</u>	
REVISION	DOC	NO. TWR-6422	2 VOL	

Motor No.: 360L029	Side: Right (B)	Date:	09-03	-93
Assessment Engineer(s)/Inspector	(s): ERIC HAY			
Factory Joint: Aft Center				
Case Factory Joint Observations:  A. Heat Affected or Eroded John B. Heavy Corrosion in Joint?	-	Yes	No	Comment #
C. Heavy Corrosion in Leak Ch	heck Port?	<del></del>		
Note: Heavy corrosion is defined as corrosion that causes pitting. It may be necessary to remove corrosion to determine if pitting has occurred; however, care should be taken not to damage the hardware. A cloth dampened with solvent or green Scotch-Brite® pads may be used to remove the corrosion. Corrosion removal is to be done in a circumferential direction only.				
Notes / Comments				
$\mathcal{N}$	ONE			
Preliminary PFAR(s)?Yes	No Preliminary PFA	.R Number(s)	):	
Yes	No Clarification For	m Page No. (	(s):	
REVISION	DOC NO.	TWR-642:	PAGE B-75	<del></del>



Motor No.: 360L029	Side: Right (B)	Date:	5-12-9	5
Assessment Engineer(s)/Inspector	(s): H. ZAREMUA			
Factory Joint: ET Attach/Stiffene	or			
Case Factory Joint Observations:  A. Heat Affected or Eroded Jo	oint O-ring?	Yes	No	Comment #
B. Heavy Corrosion in Joint?				
C. Heavy Corrosion in Leak C	heck Port?	<del></del>		
corrosion to determine hardware. A cloth dan	ned as corrosion that causes pitti if pitting has occurred; however, appened with solvent or green Sco on removal is to be done in a circ	care should be tch-Brite <sup>®</sup> pads	taken not may be us	to damage the ed to remove
Notes / Comments				
•				
T liminary PFAR(s)?Ye	s No Preliminary I	PFAR Number(s)	:	
Curification Form(s)?Ye	s No Clarification	Form Page No.(	s):	
REVISION	DOC		2 PAGE B-76	

Motor No.: 360L029	Side: Right (B)	Date:	5-12-93	
Assessment Engineer(s)/Inspector	(s): H.ZAREMBA			
Factory Joint: Stiffener/Stiffener				
Case Factory Joint Observations:  A. Heat Affected or Eroded Jo	oint O-ring?	Yes	No	Comment #
B. Heavy Corrosion in Joint?	_		- V	
C. Heavy Corrosion in Leak C	heck Port?			
Nota: Hanny corresion is defi	ned as corrosion that causes pi	AA!		
	if pitting has occurred; however			
	npened with solvent or green So			
	on removal is to be done in a c		•	
	on removal is to be done in a c		- Chon Only	· · · · · · · · · · · · · · · · · · ·
Notes / Comments				
•				
Timinary PFAR(s)? Yes	No Preliminary	- DEAD N	٠.	
Total Test	NO Preliminary	PFAR Number(s)	<u> </u>	
Yes	No Clarification	n Form Page No.	(s):	
	DO	c NO. TWR-642:	22   VOL	
REVISION	SEC		PAGE B-77	

Motor No.: 360L029	Side: Right (B)	Date:	5-10-°	73		
Assessment Engineer(s)/Inspector	(s): GARY ASPER	(QA)	)			
Factory Joint: Aft Dome						
Case Factory Joint Observations:  A. Heat Affected or Eroded Joint O-ring?  B. Heavy Corrosion in Joint?		Yes	No /	Comment #		
C. Heavy Corrosion in Leak Cl	neck Port?					
Note: Heavy corrosion is defined as corrosion that causes pitting. It may be necessary to remove corrosion to determine if pitting has occurred; however, care should be taken not to damage the hardware. A cloth dampened with solvent or green Scotch-Brite <sup>®</sup> pads may be used to remove the corrosion. Corrosion removal is to be done in a circumferential direction only.						
Notes / Comments						
	7/A					
minary PFAR(s)?Ye	B No Preliminary P	PFAR Number(s	):/ <u>A</u>			
Carification Form(s)?Ye	s No Clarification	Form Page No.	(s): <u>~/A</u>	······································		
REVISION	DOC 1		22 VOL			

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